

Internship Answers

These are some of the survey results that were used to write the article, "Internships: Gateway to Success!" in the September, 2006 issue of *Surface Matters*. They have been posted here with the respondents' permission.

1) What was your major?

Master's degree in Management Information Systems, Bachelor's degree in Architecture

2) What made you decide to take an internship in GIS?

Curiosity and an available opening

3) Did you consider internships in any other fields?

Yes. I worked as an architect intern as well.

4) Did the internship require any classroom time at school, such as writing about the experience?

At the end of the internship I had to write a synopsis

5) What year did you do the internship?

2002

6) Where did you do the internship?

At Kapur & Associates, Inc., my present place of employment

7) What did you do there?

Primarily worked on making maps and data entry

8) Were you paid for the work you did during the internship?

Yes. I was.

9) What sorts of things did you learn? (About the technology, the "real world," or anything else.)

Lessons learned were – 1. GIS/IT was an ever changing industry with new programs to learn constantly, 2. A good attitude amounted to a LOT at the workplace, 3. It's not always easy to work in a team

10) How many hours per week did you work?

40

11) Did you have any particular expectations beforehand? Did they come true?

Yes and no. I thought I was going to be involved in a LOT of exciting projects. Some were, some were not.

12) Did the internship experience have an impact on your decisions about a career?

Yes it did. I am now a GIS coordinator and just received my certification.

13) Was the experience worthwhile?

Yes, very much so.

14) Would you recommend an internship to current students?

Absolutely. I learnt more about the industry in 6 months of internship.

15) Do you have any additional comments?

1) What was your major?

My major was Geography with an emphasis in urban studies.

2) What made you decide to take an internship in GIS?

I took a couple of GIS classes and realized that this is where many of the geography-related jobs would be upon graduation.

I had no prior work experience in geography or GIS and I thought that through an internship I would be able to see if I really liked the field while at the same time I could gain valuable work experience.

3) Did you consider internships in any other fields?

Yes, I was considering something in a related field such as an urban planning internship.

4) Did the internship require any classroom time at school, such as writing about the experience?

No, I wasn't required to do any classroom time.

5) What year did you do the internship?

My internship began in the fall of 2004 and ended up getting extended a number of times.

6) Where did you do the internship?

The internship was with the Arizona Department of Environmental Quality in downtown Phoenix.

7) What did you do there?

My duties were to create maps (using ESRI software) in order to support a planning department within the ADEQ. In broader terms it was helping to make sure that the State enforced the Federal Clean Water Act.

8) Were you paid for the work you did during the internship?

For the first 3 months of my internship I wasn't paid. Then they decided to keep me around a bit longer and put me on the payroll.

9) What sorts of things did you learn? (About the technology, the "real world," or anything else.)

I made a habit of trying to learn one new GIS-related thing every day. If I came across a problem I'd try to solve it myself before asking for help. I'd read the help files, textbooks and online resources. Fortunately, the people I was working with were patient and knowledgeable.

10) How many hours per week did you work?

My internship was about 10-15 hours a week.

11) Did you have any particular expectations beforehand? Did they come true?

I initially thought that I was getting in over my head as I'd only taken two GIS courses at ASU. I was hoping to learn as much as I could within the 3-month span of the internship and then hopefully be able to stay within the field. One thing led to another and the internship evolved into a much longer period of time. It turned out to be a springboard into a full-time position with another branch of the State government.

12) Did the internship experience have an impact on your decisions about a career?

Yes. After about a week I knew that I could do this.

13) Was the experience worthwhile?

The experience was great. I met a lot of really nice people and was able to learn a great deal about GIS within a government setting.

14) Would you recommend an internship to current students?

Absolutely. It's vital to get 'real world' experience. Besides the practical GIS knowledge you will acquire, there is also a good chance that you will meet people within the field who will be able to help you when it comes to the post-graduation job search.

15) Do you have any additional comments?

Three pieces of advice: Be polite, keep a positive attitude and try to learn something new every day.

1) What was your major?

Graduated from the University of Arizona with a B.S. in Regional Development and minor in sociology.

2) What made you decide to take an internship in GIS?

I saw an opening on their website and it interested me, I also have some family working here which told me that this is a great place to work and a very prosperous industry.

3) Did you consider internships in any other fields?

I did consider internships at real estate firms, but with the real estate market being to lop-sided with people wanting to get in and the instability of the market at times, I felt GIS would be a better field to explore.

4) Did the internship require any classroom time at school, such as writing about the experience?

I took a class at the University of Arizona that dealt with mainly taking an internship. At the end of the semester for 150 hours of work you could get 3 credits (50 hours per credit) and at the end of the semester you had to complete a group exit interview with the teacher sponsoring the class. There he asked what you did, you could bring in presentations you constructed, you talked about what you did at work, and he asked if you would consider this as a future career.

5) What year did you do the internship?

I started the internship in April 2005.

6) Where did you do the internship?

Tucson Electric Power

7) What did you do there?

GIS data maintenance: updating the entire GIS (GE Smallworld) with current information crucial to the production and distribution of energy, generate maps for presentations, software training in design (CH-Bentley's Expert Designer) and work management (STORMS), process work requests, maintain load projection data (Advantica SynerGEE), and field data collection of electrical facilities such as capacitors, transformers, and electrical lines.

8) Were you paid for the work you did during the internship?

Yes, I am paid to do my internship.

9) What sorts of things did you learn? (About the technology, the "real world," or anything else.)

I learned a great deal about how energy is produced and distributed throughout the city. We had a great deal of training on the equipment used to distribute electricity, the business approach to distributing the electricity, and everything in between the generation of electricity to how it is delivered into your house. Basically a lot of information is given to you so you can do your job safely, efficiently, and effectively. There is a great deal of new technology emerging in the industry such as automatic meter readers.

10) How many hours per week did you work?

During the school year I work about 25 hours a week. During the summers and Christmas break I worked 40 hours a week.

11) Did you have any particular expectations beforehand? Did they come true?

I was just anxious to learn something new. At first it was a struggle because everything you are taught mostly now is through ESRI products where here our GIS is GE Smallworld. Through running through the motions and the excellent staff here to help with any questions, I feel that I am pretty proficient at working on just about anything in the GIS.

12) Did the internship experience have an impact on your decisions about a career?

I plan on staying with the Tucson Electric Power in any way I can. I love the company and the training in the software that we use made me choose the career path because of the environment of which I have worked. You feel like you are part of a giant family here and you can feel the impact you have on each different side of the company through the work you do in the GIS.

13) Was the experience worthwhile?

The experience was very worthwhile, especially through the eyes of a student graduating from college the previous year.

14) Would you recommend an internship to current students?

An internship cannot hurt at all. At least you can figure out before you start your career what you want to do before you commit yourself to it after college. If you don't like it, you already have that knowledge that you need to choose something different. I would definitely recommend an internship anywhere before college graduation.

15) Do you have any additional comments?

1) What was your major?

Geography - ASU - we didn't have a GIS "degree", just an "emphasis."

2) What made you decide to take an internship in GIS?

Several reasons. To be more marketable in getting a job after I graduated. Gain relevant experience. See what types of jobs were out there.

3) Did you consider internships in any other fields?

I considered an internship at the State Legislature Office. It didn't have anything to do with GIS and I had my mind made up I was looking for GIS internships.

4) Did the internship require any classroom time at school, such as writing about the experience?

Yes, I had to keep a journal of what I learned and write brief weekly summaries of my experience and what I was learning outside of class.

5) What year did you do the internship?

I had two internships and they were both in 2000.

6) Where did you do the internship?

I had one internship with the Maricopa County Flood Control District - Lands Dept. and the other with a real estate firm called JPI.

7) What did you do there?

I updated maps with labels at both internships using ArcView 3.2. Both internships wanted maps at certain scales with a bazillion labels on each one, perfectly readable at 1:100,000. I did what I could. The internship with JPI was slightly more interesting. I was able to use demographic data sets from a company called Claritas and link them to various other datasets via field joins, summary tables, etc. That internship was the most fun in terms of seeing what ArcView 3.2 could do. I was able to work with Avenue and write a simple customized version of ArcView. It had three buttons, which produced three different map layouts of different areas. I was also required to go out into the field and take digital photos of various new apartment communities and link those photos to point locations in ArcView. I had to use my own car, but received mileage reimbursement.

8) Were you paid for the work you did during the internship?

Yes, I was paid for both internships. Approx. 8-11 dollars/hour

9) What sorts of things did you learn? (About the technology, the "real world," or anything else.)

While working for JPI, I learned how to connect ArcView 3.2 to Microsoft Access databases to do "data mining" for demographic data to produce maps relative to our current projects. While working for the Flood Control District I learned how data accuracy was important with respect to calculating polygon acres. I learned that not everyone liked ArcView 3.2, especially the surveyors. They preferred Micro Station or Eagle Point for data accuracy. I learned about the various types of legal descriptions/PLSS.

10) How many hours per week did you work?

I worked 19 hours per week at the Flood Control internship and approximately 16 hours/week at JPI.

11) Did you have any particular expectations beforehand? Did they come true?

Yes, I thought that I would have had a mentor to help learn more about the field than what I would learn on my own. Neither internship really had a mentor available as the whole reason I was there in the first place was because no one had time to do this work.

12) Did the internship experience have an impact on your decisions about a career?

Yes, I realized what I liked doing and what I didn't like doing. I also realized that I couldn't expect to do exactly the same thing for the next employer as each internship had its own unique responsibilities. Using ArcView and applying what GIS/geography I knew came second to learning the ropes of the business workflows. I also realized that I needed to get more training in computers if I were going to last in the GIS market.

13) Was the experience worthwhile?

Yes, both internship experiences were worthwhile. While both internships had times when there wasn't anything to do and times when the stuff I was doing was so completely boring, I knew that these were just temporary life experiences.

14) Would you recommend an internship to current students?

The more internships you can take prior to graduating the better off you will be. Also, take them as soon as you can, don't wait until your senior year. Internships are your chance to learn what you don't know you don't know. They also count for job experience when it is time to negotiate a real job offer.

15) Do you have any additional comments?

GIS changes frequently in terms of technology. GIS concepts haven't changed since I graduated. Technology is always a learning curve and you may never be on top of the curve. Do you need computer science to be successful in GIS, maybe/maybe not. It depends upon the business domain in which you work. However, I would recommend to future GIS graduates that at least they take an introduction course in computer science and if possible a course in Business Systems Analysis and Design. This course would help GIS professionals model business workflows which translate into enterprise GIS thinking.

1) What was your major?

B.S. in Geography, with a GIS certificate

2) What made you decide to take an internship in GIS?

It was going to be my career, so the hands-on experience and applying what I learn in the classroom to the real world would be very beneficial. I was also able to get credit for it.

3) Did you consider internships in any other fields?

I was pretty open to the possibility, but I got lucky because the first internship I found was for GIS, and that is the one I got.

4) Did the internship require any classroom time at school, such as writing about the experience?

To get credit for it, yes. It was really a part-time paid position for college students, so it was an internship, but there was not much college-to-workplace collaboration except for the semester that I got credit for it. The class met a few times during the semester to explain what we'll be doing, what we plan/hope to get out of it, and things like that. Towards the end of the semester, we had to present what we learned, what we did there, and reflect on the experience. A paper was due on the subject as well.

5) What year did you do the internship?

From May 2004 to February 2006, but received credit for it in spring semester of 2005.

6) Where did you do the internship?

City of Phoenix, Engineering and Architectural Services Department, Geographic Technology Section

7) What did you do there?

The Section is responsible for mapping the landbase from legal, recorded documents. These could be deeds, easements, city ownership changes, city boundaries, subdivision plats... a whole array of documents came to us and they were mapped into the GIS. The backlog is still enormous since Phoenix is growing like crazy. My specific duties, as an Engineering Tech, were to assist in obtaining and prepping these documents for the GIS techs, and then to close out their work once they were finished. A lot of filing, database tracking, and data entry. I also would print out quarter-section maps that the work was done on and distribute copies to other city departments. There was little hands-on GIS work, but I worked very closely with those who did do that work.

8) Were you paid for the work you did during the internship?

Yes, I was paid nicely for what I was doing. I started at around \$13 per hour, and after two years, when I got promoted to a full-time position, I was making \$14.50 per hour. No City benefits though for part-time jobs.

9) What sorts of things did you learn? (About the technology, the "real world," or anything else.)

I learned tons. The major thing was how office politics (cubicles, chain of command, etc.) operate. It was a new eye-opening experience to have my own cubicle and no time-clocks or anything. Also, since I was using the latest technology in the classroom and the not-so-latest technology at work, I was able to see how far GIS has actually come, from the old UNIX based days, with coverages and everything. It made me appreciate GIS more and also made me want to make sure I find a career where new technology is being used. I also learned about how working for the government works, I learned about working closely with other people as well as independently, I learned about deadlines, I learned about managing my time, I learned about bus schedules to and from campus, I learned about managing a good sized paycheck... I learned a lot. More than I'll ever realize.

10) How many hours per week did you work?

Around 20 during the school year, and up to 30 over the summer.

11) Did you have any particular expectations beforehand? Did they come true?

I really didn't know what to expect, since my 5 jobs beforehand were all fast food, gas stations, or Home Depot. I had just declared my major as Geography before I got the internship, so I guess I expected to be able to apply everything I learned in the classroom to the workplace. This didn't come true entirely due to the technological limitations at work.

12) Did the internship experience have an impact on your decisions about a career?

Definitely. I realized that I would need more schooling in order to succeed in a GIS career, without having to work my way from the bottom. GIS technicians are in great demand and are everywhere, which unfortunately means they usually start at the bottom of the barrel and must work their way up. The City is no different. In order to avoid having to climb this tall ladder, I wanted to have an edge and that meant education. I decided to enroll in the new GIS Master's program at Arizona State, which starts in about a week and a half here. Hopefully it will teach me everything I need to know to get a senior or supervisory position rather than entry-level. Owning my own business and/or consulting would be something I would love to be able to do as well.

13) Was the experience worthwhile?

Very worthwhile. The internship taught me a lot, prepared me more for a career in GIS, helped me earn credit, and kept my wallet full.

14) Would you recommend an internship to current students?

Definitely. I already have. In February I was offered a full-time job as a GIS Technician with the City, and have been doing that since. One of my first tasks was to contact ASU and let them know that we are looking for an intern to fill my old position. I then trained the person that was hired. And I hope that he was as fortunate as I was, and gets as much out of the experience as I did. If anything, he has another few lines on his resume to give him the edge now.

15) Do you have any additional comments?

No, I hope this helped you though.

1) What was your major?

My major is Geography with a minor in Geographic Information Systems (GIS).

2) What made you decide to take an internship in GIS?

I thought working in the field was the best way to develop my skill sets within the GIS.

3) Did you consider internships in any other fields?

I did consider other internships in the remote sensing field since I have taken a couple of those classes and have really enjoyed them.

4) Did the internship require any classroom time at school, such as writing about the experience?

I haven't done this part of the internship yet, but I know you either have to write a paper or present to the instructor some of the main projects you worked on during your internship.

5) What year did you do the internship?

I am currently doing the internship and will continue doing it until August of 2007.

6) Where did you do the internship?

I am doing my internship at Tucson Electric Power (TEP).

7) What did you do there?

So far I have been working on everyday data maintenance for the GIS. I have also been put on some project where I have to create maps for presentations.

8) Were you paid for the work you did during the internship?

I am being paid for my internship

9) What sorts of things did you learn? (About the technology, the “real world,” or anything else.)

I have learned a lot, especially since the GIS we use at TEP is different than the school-taught GIS. This has been a great opportunity for me to expand my knowledge of the GIS software that is out there. It has also been a great real world experience since I have been able to work with other people and calibrate to get jobs done.

10) How many hours per week did you work?

Right now during the summer I have been able to work 40 hours a week but when school starts I will only be able to work 20.

11) Did you have any particular expectations beforehand? Did they come true?

My expectations beforehand have been exceeded immensely. I have learned a lot more than I thought I was going to. It has been great working in a team environment and having everybody help expand your knowledge of the system.

12) Did the internship experience have an impact on your decisions about a career?

Working here has reassured me that GIS is the career I want to pursue.

13) Was the experience worthwhile?

So far the experience has been great and well worth it, especially since when I graduate it will be a lot easier to get a job here and start a career.

14) Would you recommend an internship to current students?

I would definitely recommend this internship to another student.

15) Do you have any additional comments?

1) What was your major?

Biology (University of Santa Ursula, 1984, Brazil)

2) What made you decide to take an internship in GIS?

I am taking GIS classes at Phoenix College and wanted real hands-on practice.

3) Did you consider internships in any other fields?

Not really. I am a field biologist and what I need is a real job.

4) Did the internship require any classroom time at school, such as writing about the experience?

No, not yet, but my instructor, Remy Autz, might still ask me to do that.

5) What year did you do the internship?

2006

6) Where did you do the internship?

Audubon Appleton-Whittel Research Ranch, AZ

7) What did you do there?

Map creation, data analysis and management, tracking of grass areas using a GPS unit and adding them to maps.

8) Were you paid for the work you did during the internship?

Yes.

9) What sorts of things did you learn? (About the technology, the “real world,” or anything else.)

Well, I am learning a lot about the different coordinate systems, how to use a GPS, how to bring GPS data into ArcView 9.1, how to create and edit shapefiles, among other things.

10) How many hours per week did you work?

About 40.

11) Did you have any particular expectations beforehand? Did they come true?

Yes, learn in a real life situation, being able to make useful maps and being able to contribute with an ecological project. And yes, everything is happening.

12) Did the internship experience have an impact on your decisions about a career?

I wanted to work with field biology and do GIS as needed, opposed to being a GIS person that does field work eventually, and I see now that that is really what I want to do: field work with eventual GIS work.

13) Was the experience worthwhile?

Yes, for all I am learning and for all the people I am getting to know.

14) Would you recommend an internship to current students?

Highly recommend!

15) Do you have any additional comments?

I am very thankful to my instructor, who spends many hours of his time helping me with my projects, as well as Linda Kennedy, the ranch director, who gave me this opportunity.

1) What was your major?

Geography with a GIS emphasis

2) What made you decide to take an internship in GIS?

I had two internships. The first one was for credit. The instructors and class advisors strongly recommended doing an internship for the experience. I wanted to get as much “real world” experience as possible before graduating so I had something to put on a resume that was related to what I would be doing. The second internship was not for school credit. It was just for the additional experience.

3) Did you consider internships in any other fields?

No. I wanted to keep it in the field of GIS.

4) Did the internship require any classroom time at school, such as writing about the experience?

The first internship was for credit and required a short paper about my experience.

5) What year did you do the internship?

Both internships were in 2002

6) Where did you do the internship?

First one was at the Arizona Department of Health Services and the second was at the Arizona State Parks.

7) What did you do there?

At the Health Department I created maps of immunization trends in Maricopa County and the state. These maps were used by the department as well as independent health organizations. At the Parks Department, I helped show the importance of GIS as I was one of the first to do GIS work for them. I created maps of current park land and potential park land. These maps helped decision makers in the purchasing of new park land.

8) Were you paid for the work you did during the internship?

The first internship was for credit...the second was paid.

9) What sorts of things did you learn? (About the technology, the “real world,” or anything else.)

At the first internship, I realized how much I didn't know about the software. I was determined to learn more, outside of school and got another internship to gain more knowledge and experience. At the second one, I learned more about the software and the administrative and management parts of GIS

10) How many hours per week did you work?

20 to 30 hours for both internships.

11) Did you have any particular expectations beforehand? Did they come true?

I expected to learn how to “really” use GIS. I learned more than I would in school, but I also realized I had a lot more to learn.

12) Did the internship experience have an impact on your decisions about a career?

It just cemented my goals of graduating and going into the field of GIS

13) Was the experience worthwhile?

Having two internships under my belt helped me land a job by showing the employer that I had the drive and determination to work in the field of GIS and that I enjoyed it. I also had the confidence that my GIS skills were applicable in the work force.

14) Would you recommend an internship to current students?

As someone in a position that reviews resumes and makes decisions on which person to hire or not hire, I can say that it is important for students to get “real world experience.” Many employers like to see experience, even for an entry level position. As more and more people enter the field, the competition for positions will also increase. Internships add a competitive edge to those seeking employment after graduation.

15) Do you have any additional comments?

Some internships may turn into full time positions upon graduation.

1) What was your major?

I majored in Geography and have a minor in environmental studies from the University of Hawaii at Manoa.

2) What made you decide to take an internship in GIS?

I met a professional who was showing my geography field class how to use a GPS unit who told us if we wanted to get a job using our geography skills we would have to learn GIS. He was so animated and

excited about the topic that I really paid attention. He loved what he was doing and I was looking for a way to use my degree for a regular career. So, I decided to try to find a way to gain experience using GIS before I graduated so I could have something to put on my resume.

3) Did you consider internships in any other fields?

I would have worked in any field that was using GIS to gain experience. It is a multidisciplinary tool that fits nicely with all professions; I would have worked with the health field if I thought I would have gained valuable hands-on experience.

4) Did the internship require any classroom time at school, such as writing about the experience?

Yes, I had to prepare and present as a proposal for the work I would be doing for the internship. It was very much like the normal private work environment. I had to prepare the cost and time and hardware and software I would need to use to complete the project as well as the tasks and time it would take to complete it. And at the end of the course, I had to present my findings in front of a large audience composed of all the mentors, professors and students from the several classes.

5) What year did you do the internship?

I did my internship in 1997-98.

6) Where did you do the internship?

I interned with TerraSystems Inc. in Honolulu, Hawaii under the president and owner Dr. Jonathan Gradie. TerraSystems specialized in remote sensing and used GIS with satellite and aerial imagery to perform environmental analysis for their clients. Dr. Gradie also designed, manufactured and sold specialized cameras and was a re-seller for various products and software.

7) What did you do there?

I created a hydrographic flow model of Kapolei, Hawaii on Oahu with ArcView 3.x. I obtained and convert data for soils, streets, slope, etc. to find an estimation of rain water runoff in that newly developed region. I also performed imagery classification using imagery software for projects TerraSystems was working on.

8) Were you paid for the work you did during the internship?

I was not paid during my internship with Terra Systems, Inc. but I was offered a part time position with them briefly after I graduated.

9) What sorts of things did you learn? (About the technology, the “real world,” or anything else.)

I learned new software for modeling and used the latest GIS products in their Beta form as TerraSystems was a Beta tester for ESRI Inc. I learned how to work with databases and take raw data and clean it. I learned that there are a lot of subjective choices when one is working with real world data that can color the way the project comes out and if you do not have the experience to deal with that information you can make costly mistakes. I also learned to deal with unforeseen problems, things you cannot ever in your wildest imaginings think would occur and you have to be at your best to deal with, always keeping in mind the client's best interest, needs and the profit you are trying to achieve.

10) How many hours per week did you work?

I worked approximately 12 hours a week and gained class credit for it, but honestly, I loved the work so spent additional time, up to 10 hours, in the lab at school to make a really good project.

11) Did you have any particular expectations beforehand? Did they come true?

I did not have any special expectations, I had been told the professionals would be very busy and have limited time to spend with me and that I would have to ask the necessary questions to learn more about using GIS in a real world environment.

They did come true and I learned loads by speaking with Dr. Gradie, I found out how projects are proposed and how the presenters vie for the bid. I basically learned everything about working in a professional environment using GIS from hunting for the bid to finding the data and purchasing the software and hiring the help, to the final bill. It was a real first look at the world of geography in action.

12) Did the internship experience have an impact on your decisions about a career?

The experience had a tremendous effect on my career and on my life choices. I decided this was the coolest place to be working in science today. GIS as a tool is limitless as to its usefulness. It is so versatile that I decided that no matter what I did I would be working using this technology.

13) Was the experience worthwhile?

I believe the experience was invaluable and I would not be doing what I am today, heading up the GIS services for my city of Casa Grande, Arizona if I did not participate in the internship. I was able to use the experience on my resume and this has been a world of help to me resulting in employment in Hawaii for environmental clients and work in the United Kingdom for transportation clients.

14) Would you recommend an internship to current students?

I would say it is almost mandatory and stress how important it is that the student gain outside experience in geography/GIS or their chosen field before they graduate. They really need something to put on their resume of substance. I am in fact, the key decision maker for hiring in my department concerning GIS and I know that I will choose a new graduate who has internship experience in the work world over the graduate who does not simply because they have been exposed to what the real world of work is like.

15) Do you have any additional comments?

I would advise anyone who is attending university to take a course in GIS and intern in their field before they graduate because they will have a distinct advantage over the graduate who does not have that experience when the choice on who to hire comes up. GIS is becoming a common tool in many disciplines and I foresee the time when it will be as common on a desktop as a word processing application. I am getting my city ready to participate in a GIS internship program with ASU as I write this and look forward to providing a similar experience as I had for their students for their benefit and for ours....as we are growing and will be needing to hire very soon!